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USSR Report

AGRICULTURE

No. 1258

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CONTENTS

MAJOR CROP PROGRESS AND WEATHER REPORTING

Grain Harvest Notes From RSFSR
(Editorial Report).. 1

Sugar Beet Harvest Reports From Ukraine, Voronezhskaya Oblast
(Editorial Report).. 2

Sugar Beet Harvest
(Editorial Report).. 4

Potato Crop, Harvest Progress in Ukraine
(Editorial Report).. 7

Potato Crop, Harvest Reports From RSFSR
(Editorial Report).. 10

POST HARVEST CROP PROCESSING

Methods Detailed for Prevention of Sunflower Crop Losses
(Yu. N. Buryakov, V.F. Abramov; ZERNOVOYE KHOZYAYSTVO, Sep 80) 13

AGRO-ECONOMICS AND ORGANIZATION

New Forms of Organizing Production in the Poultry Industry
(K. Karyukina; EKONOMIKA SEL'SKOGO KHOZYAYSTVA, Aug 80)...... 19

Interbranch Ties, Increasing Role of Barter Discussed
(V. Struchalin; ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV, Aug 80).. 30

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST NOTES FROM RSFSR

[Editorial Report] Grain in Krasnoyarskiy Kray occupies more than 2,000,000 hectares. Agricultural workers in Tashtypskiy Rayon in Khakassia were the first to fulfill the plan for grain sales of the State and are now sending above plan grain to the elevators. Grain growers in Tyukhtetskiy, Pirovskiy, Achinskiy, Bogotol'skiy and Yeniseyskiy Rayons have finished thrashing the grain. The crucial and difficult days of the completion of the harvest have come to the fields near the Yenisey. The warm sunny weather of the last week of September has been replaced by cold. Only the maximum degree of organization and discipline, and the skillful shifting of the equipment will help to successfully complete the whole complex of harvest work and avoid harvest losses. [Moscow PRAVDA in Russian 5 Oct 80 p 1]

Enterprises in Udmurtia have finished cutting grain on half of the fields. [Moscow TRUD in Russian 26 Aug 80 p 1]

Original units built by the skilled people at the enterprises in Udmurtia are helping equipment operators accelerate thrashing of wet grain windrows. For example at the kolkhoz "Rossiya" in Mozhginskiy Rayon, the largest in Udmurtia, engineer M. V. Kuznetsov adapted a ventilator of a tractor drawn sprayer OVT-3 for drying out windrows. The work of the kolkhoz inventor is effective: two such installations in a day can blow dry soaked grain from more than 100 hectares.

The experience of the equipment operators at the kolkhoz "Rossiya" has been copied widely. At many enterprises they are also using ventilators from chaff catchers and radiators. [Moscow SOVETSKAYA ROSSIYA in Russian 14 Sep 80 p 1]

In October early snowfalls followed the prolonged rains on the fields of the southern Urals in Chelyabinskaya Oblast, covering the not yet fully harvested grain with snow. However under these most difficult conditions equipment operators at the sovkhoz "Severnyy" are continuing to thrash grain crops. They adapted straw pick-up balers for cleaning snow from grain windrows. The windrows they pick up are laid down clean again on a stubble field sealed by the frosts, and the grain combines following after them thrash the windrows. In a day one pick-up baler frees windrows from the snow on an area of up to 15 hectares. The innovation, to which many enterprises in Chelyabinskaya Oblast are turning, is helping agricultural workers gather the harvest fully. [Moscow TRUD in Russian 14 Oct 80 p 1]

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

SUGAR BEET HARVEST REPORTS FROM UKRAINE, VORONEZHSKAYA OBLAST

[Editorial Report] The sugar beets are late in finishing ripening. In many oblasts the sugar beet roots and tops are still growing, the sugar content is increasing. And whereas these were the reasons the sugar beet growers gave for not hurrying with the harvest during September this can in no way justify the insufficient pace of work on the sugar beet fields in the middle of October. This year the beets remain undug out on twice the size of that of the corresponding date last year. The harvest schedule at many enterprises is not being carried out. This applies in particular to Zhitomirskaya, Dnepropetrovskaya, Vinnitskaya, Khmel'nitskaya and certain other oblasts. During the week from 6 to 13 October sugar beets were dug out on an area of 156,000 hectares. At this rate the harvest could stretch until the middle of November. Therefore the pace should be at least doubled if not tripled, bringing all combines into operation and guaranteeing their highly productive utilization.

The sugar beets should more quickly be conveyed to the reception points, means of transport should be utilized more productively. The amount of dug out sugar beets is not only not decreasing, but on the contrary is increasing. In Sumskaya, Poltavskaya and Vinnitskaya Oblasts 350,000 to 370,000 tons of sugar beets each remain in the fields. Many dug out sugar beets also remain in the fields in Khar'kovskaya and Kirovogradskaya Oblasts. [Kiev SIL'S'KI VISTI in Ukrainian 18 Oct 80 p 3]

This is an urgent time for the sugar beet growers. It is very urgent that the digging out of the sugar beets be finished in the next few days, that they be quickly conveyed to the processing enterprises and that no harvest losses be permitted. During the week from 13 to 20 October sugar beets were dug out on an area of 287,000 hectares, as opposed to 156,000 hectares during the previous seven days.

At enterprises in Khar'kovskaya and Poltavskaya Oblasts, where over 90% of the area has been cleared of the crop, they are finishing the digging out of the beets in a well organized manner. Kolkhozes and sovkhozes in Dnepropetrovskaya, Sumskaya and Chernigovskaya Oblasts are also nearly finished with this work. Beet growers in Ternopol'skaya Oblast have also intensified their harvest effort. They have dug out beets on an area of 30,700 hectares and thereby gained the opportunity to finish this work in seven or eight days.

Unfortunately quite a different situation prevails in Vinnitskaya Oblast, where beets are not yet dug out on almost 90,000 hectares. If such a pace continues in the future it will take the beet growers another three weeks to complete the harvest work. And this will undoubtedly lead to losses.

Many beets remain undug out at enterprises in Khmel'nitskaya Oblast. During the last week beets were harvested on an area of only 26,000 hectares. Harvest work must also be intensified in L'vovskaya, Ivano-Frankovskaya, Rovenskaya, Chernigovskaya and Nikolayevskaya Oblasts. [Kiev SIL'S'KI VISTI in Ukrainian 25 Oct 80 p 1]

In Voronezhskaya Oblast the pace of the sugar beet harvest is picking up. Yesterday the millionth ton of sugar beets was sent to the processors. [Moscow TRUD in Russian 15 Oct 80 p 1]

The sugar beet area in Voronezhskaya Oblast is the largest in the Central Chernozem Zone. It occupies 4,000,000 hectares. The beet harvest is going forth under difficul conditions. Heavy September rains have severely water logged the soil but the skillfulness of the equipment operators is coming to the rescue. [Moscow TRUD in Russian 18 Oct 80 p 1]

CSO: 1811

MAJOR CROP PROGRESS AND WEATHER REPORTING

SUGAR BEET HARVEST

[Editorial Report] The 1 July 80 issue of Moscow SEL'SKAYA ZHIZN' in Russian pages 1 and 3 reports Belgorodskaya Oblast will sell no less than 3,400,000 tons of sugar beats to the state. Page 1 of Moscow SOVETSKAYA ROSSIYA in Russian 12 September states that after prolonged rains in the central chernozem areas sunny weather finally set in. Agricultural workers in Voronezhskaya and Lipetskaya oblasts began harvesting sugar beets.

Digging out and especially conveying of sugar beets to the processing plants is going forth slowly in many rayons. In the first week in September not all sugar processing plants had begun operating. Due to lack of raw material the schedule for processing plant output is being disrupted and speaking straighforwardly much is lost in this.

Specialists consider that having begun the sugar processing season on the first of September they could have processed 450,000 tons of sugar beets in the first week of September alone. If this raw material remains unprocessed at the end of the season when the sugar output drops off by a third 20,000 tons of sugar will be lost.

Sugar beet growers and processors in both oblasts are full of resolve to gather and process the entire sugar beet crop in time and with losses and to worthily greet the party congress.

Moscow TRUD in Russian on page 1 of the 15 October 80 issue reports that in Voronezhskaya Oblast the pace of the sugar beet harvest is rising. Yesterday the millionth ton of sugar beet was sent to the processors.

Moscow SOVETSKAYA ROSSIYA in Russian 27 September 80 on page 1 points out that the sugar beet growers in Kurskaya Oblast have one concern--to more quickly dig out the sugar beets and deliver them for processing. The rains which held up the harvest finally stopped and the affair went forth more smoothly.

In Kurskaya Oblast there are enterprises and whole rayons where all agricultural work is well integrated. In Korenevskiy Rayon the beet harvest for example began somewhat later than elsewhere but the pace set has been the highest. A six-row complex has worked up to 10 to 12 hectares a day! Korenevskiy Rayon is one of a few.

In Krasnodarskiy Kray as reported in Moscow TRUD in Russian 15 October 80 page 1, the sugar beet harvest is arriving at the sugar processing plants around the clock. Sugar beets occupy 213,000 hectares here. Half of this area is already harvested.

Moscow SOVETSKAYA ROSSIYA in Russian 24 September 80 page 1 states that the sugar beet fields in the North Caucasus is one of the largest in the RSFSR. This year they will grow and sell to the state over 7 million tons of sugar beet here. This is almost 40 percent of the RSFSR crop.

Minsk SEL'SKAYA GAZETA in Russian 16 Sepbember 80 page 1 reports that Altayskiy Kray enterprises began processing sugar beets yesterday. They plan to produce 48,000 tons of sugar this year.

In Ul'yanovskaya Oblast, as reported by Moscow GUCOK in Russian 10 October 80 page 1, the pace of sugar beet procurement is significantly higher han last year's. Enterprises have sent more than 100,000 tons of sugar beet to the processing plant. Agricultural workers here will send half again as many times last year's harvest to the processing plants.

Moscow TEKHNIKA V SEL'SKOM KHOZYAYSTVA in Russian No 9 September 80 page 43 states the sugar beet area in the kolkhozes and sovkhozes of the Ukraine amounts to 1,772,000 hectares.

Moscow SEL'SKAYA ZHIZN' in Russian 9 September 80 page 2 reports weather conditions this year in the Ukraine made for intense growth of the upper part of the sugar beet plant. Along with this a lag in growth of the root and a drop in the sugar content therein was observed. And although not that many days remain until large scale harvesting it is still possible to guarantee the draining of plastic matter from the leaves into the roots, to increase the sugar content therein. The application of growth regulators, especially maleic hydrazide, is of great significance in this.

Kiev SIL'S'KI VISTI in Ukrainian 26 August 80 page 1 reports a few days remain until vehicles with beets from the new harvest will be going along the country roads of the Ukraine. Agricultural workers in the Ukraine are taking measures aimed at successfully fulfilling the socialist pledges of the final year of the 5-year plan. They are high--to gather a minimum of 312 quintals of sugar beets per hectare, to sell 50,250,000 tons of sugar beets to the state and, utilizing the Yampol' experience, to derive no less than 30 quintals of sugar per hectare of crops.

Everywhere the course has been set for maximum output of the final product. This season 189 plants in the Ukraine can take in up to 2 million tons of sugar beets daily, processing nearly 406,500 tons daily--10,000 tons more than last year.

Kiev SIL'S'KI VISTI in Ukrainian 7 September 80 p 2 reports that after the rainy summer increased moisture and compactness of the soil are to be found in all sugar beet growing regions in the Ukraine. At some enterprises the fields are weed infested. The vegetational period of plant development is shorter than usual. All of this should be considered in order that a harvest shortfall or a decrease in technological properties in the raw material be allowed. In September the weight of the roots in all sugar beet growing regions of the Ukraine grows by 25 to 45 quintals per hectare and the sugar yield from 5.3 to 10.5 quintals per hectare. Therefore the workers' plans should set forth such daily tasks for conveying the raw material as well guarantee the uninterrupted work of the processing plants. Until 20 September beet supplies at the processing plants should not exceed amounts which enterprises can process in 3 days. For maximum utilization of the autumnal added growth in the harvest of the beets and the accumulation of sugar therein the large scale harvest in the primary beet growing zone should be conducted between 20 September and 25 October.

Moscow SEL'SKAYA ZHIZN' in Russian 3 October 80 page 1 states that Vinnitskaya Oblast will sell 7,320,000 tons of sugar beets to the state.

Moscow SEL'SKAYA ZHIZN' in Russian 17 October 80 page 1 reports the sugar beet area in Khmel'nitskaya Oblast is one of the largest in the Ukraine. It occupies 160,000 hectares. However, from 3 to 10 October--the peak of large-scale harvesting--beets were harvested from only 15,000 hectares. In all enterprises in Khmel'nitskaya Oblast have dug out sugar beets on only 70,000 hectares. Neither is the situation good this year in Vinnitskaya Oblast, which has the largest sugar beet area in the Ukraine. Out of 237,000 hectares a little over 125,000 hectares have been harvested, many beet have not been removed from the field. By the middle of October (after almost a month, including 15 days of large-scale harvesting) beets have been harvested on a little over 1 million hectares, that is 59 percent of the area. According to the schedule by the middle of October beets should have been dug out on 1,500,000 hectares and by 25 October it was planned to complete this important work. The raw material is also being conveyed in an unorganized manner.

Moscow TRUD in Russian 15 October 80 page 1 states that agricultural workers in Poltavskaya Oblast have sent the first million tons of sugar beets to the reception points.

Kishinev SOVETSKAYA MOLDAVIYA in Russian 21 August 80 page 1 reports the kolkhozes and sovkhozes in Moldavia have extensive fields planted to sugar beets. Much effort and funds are expended on growing it. And harvesting, especially in bad weather, is not easy. Therefore sugar beets are considered one of the labor intensive crops. But the sugar beet field also rewards the crop farmer handsomely--a hectare thereof gives the country 45 to 50 quintals of sugar. This year sugar beet growers in Moldavia have pledged to grow 343 quintals of sugar beets per hectares and to guarantee a gross harvest of 4,110,000 tons. The year has turned out very unfavorably for the sugar beet growers as for agricultural workers in Moldavia in general. And yet thanks to high crop farming skill, broad implementation of industrial technologies a good harvest has grown up everywhere.

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

POTATO CROP, HARVEST PROGRESS IN UKRAINE

[Editorial Report] The Ukraine will sell 3.21 million tons of potatoes to the State. [Kiev SIL'S'KI VISTI in Ukrainian 8 Jun 80 p 3]

Under the weather conditions which have prevailed this year it is very important to do everything to harvest the potatoes quickly and without losses. For every day expended in vain means a significant harvest shortfall due to rotting of the potatoes from potato blight and waterlogging. On all areas planted to the varieties "priyekul'skaya rannayaya," "iskra" and "ogonek" the tops should already be cut and removed from the fields. It is time to do this urgent work also on stretches planted to the varieties "gatchinskaya" and "temp" where the above ground mass of the plant is affected by diseases.

Under this year's conditions it is absolutely necessary that cultivators equipped with chisels or narrow swath V-shaped sweeps loosen the interrow areas to a depch of 14 to 16 cm. In this the protective zone should be 20 to 22 cm on either side of the row. This measure makes for drying out of the soil, an increase in the work quality of the combines, a decrease in injury to the potatoes and a significant increase in the productivity of harvest units.

At several enterprises the late varieties "gatchinskaya" and "temp" are still flowering. In order to hasten their ripening and under this year's weather conditions to guarantee this increment to the harvest and to improve the quality thereof areas should be sprayed with a 20 percent tincture in superphosphate suspension with the addition of 0.01 percent of the herbicide 2-4D and a full dose of fungicide against potato blight.

Among the potatoes, especially the varieties "priyekul'skaya rannyaya" and "iskra," are a large quantity of small tubers, 2 cm or less in diameter. It is necessary to seal all combines. Losses and damage to the tubers can be prevented only with proper adjustment of the machinery. [Kiev SIL'S'KI VISTI in Ukrainian 31 Aug 80 p 2]

The extraordinary summer rains waterlogged the soil, which made for affliction of the potatoes by fungal and bacterial diseases. In order that losses not be permitted and the high productivity of the planting material of this crop be preserved it is necessary to adhere to the techniques recommended by scientists and verified in practice for preparing and laying them in for prolonged storage.

Those enterprises have performed correctly which have kept the dug out potatoes in temporary clamps for not less than 2 weeks before sending them off for storage or to other kolkhozes and sovkhozes for variety renewal.

Under this year's weather conditions the tubers should be powdered with quick lime or ash while they are being layed in for winter storage.
[Kiev SIL'S'KI VISTI in Ukrainian 11 Sep 80 p 1]

Kolkhozes and sovkhozes in the forest steppe and western oblasts of the Ukraine, where primary potato production is concentrated, have begun large-scale harvesting. Enterprises in Chernigovskaya Oblast have attained a good pace in this work. Here they are digging out 3,500 to 4,000 hectares of potatoes a day. At enterprises in Koropskiy, Menskiy and Sosnitskiy rayons, potatoes have been harvested from more than half the area. They are digging out 325 to 350 hectares a day in Koropskiy Rayon; 250 to 260 hectares in Menskiy Rayon; and 170 to 180 hectares in Sosnitskiy Rayon.

The situation is much worse in Sumskaya, Kirovogradskaya and Kiyevskaya oblasts, where only a third of the potatoes are dug out.
[Kiev SIL'S'KI VISTI in Ukrainian 25 Sep 80 p 2]

The potato harvest is being completed everywhere, on the fields they are making a secondary pick up of tubers, utilizing cultivation, harrowing and replowing in order to keep losses to a minimum. Special attention is being paid to storage of potatoes, in particular those harvested on waterlogged stretches. Obviously adverse conditions for potato growing prevailed in several oblasts and rayons this year. Despite this many masters of the branch grew a good potato crop.
[Kiev SIL'S'KI VISTI in Ukrainian 18 Oct 80 p 3]

An article appearing in a Ukrainian agricultural newspaper in late September reports from a session of the collegium of the Ukrainian Ministry of Agriculture. At the session Kiyevskaya and Zhitomirskaya oblasts were taken to task and the chairmen of the agricultural boards in both oblasts were cited specifically for poor work in the potato harvest. While the digging out of the potatoes and the laying in of seed for winter storage was going forth in a precise and timely manner at several enterprises in both oblasts this has not been true everywhere. Both chairmen are blamed for their weakening of organizational work and exactingness toward enterprise specialists and managers, and for failure to guarantee the supervision over the accelerating pace of the digging out of the potatoes and sending them to the seed stocks. This led to urgent work being held up quite a bit and thereafter to lower and lower yields. As of 15 September the work had been done on only 17 percent of the fields in Kiyevskaya Oblast and 14 percent of the fields in Zhitomirskaya Oblast. On the fields they are using only 30 to 40 percent of the potato harvesting equipment as a consequence of which they have dug out potatoes on 600 to 900 hectares a day, which is 5 times less than if all available equipment was in use.

Enterprises in both oblasts are not fulfilling compulsory agrotechnical measures--not cutting the potato tops, not loosening the interrow areas, violating procedures which leads to significant damage to the tubers and lowers their quality.

In Zhitomirskaya Oblast they have not protected the fields everywhere, they have not taken the cultivators out after the combines, they are not picking up the tubers.

Both oblasts are admonished to learn from the potato growers in Chernigovskaya Oblast where they have attained a fast pace which is still accelerating day by day and where, instead of waiting for the rain water to drain from the fields they do it themselves and harvest the potatoes selectively.
[Kiev SIL'S'KI VISTI in Ukrainian 26 Sep 80 p 2]

CSO: 18[illegible]

MAJOR CROP PROGRESS AND WEATHER REPORTING

POTATO CROP, HARVEST REPORTS FROM RSFSR

[Editorial Report] Frequent rains, dews and fogs have created conditions for development of a dangerous potato disease--potato blight. According to the refined season forecast, an intense development of the disease in all regions of commodity production of potatoes is expected.

Potato blight affects the leaves, stems, flowers and tubers. Dark brown leaking spots appear on lower and middle leaves in the budding and beginning of the flowering phase. In damp weather a grayish white deposit--the spore bearing fungus--forms under the spots on the underside of the leaves. The spores are spread by wind and raindrops, and in the course of a short time can infect an entire field. The affected leaves and stems turn brown, rot and withers away prematurely. Few tubers form under diseased plants, they are small, affected by spores of the fungus, and, as a rule, store badly, forming centers for rot. Potatoes may be saved from potato blight by timely and thorough working of the crops with fungicides.

Due to delayed planting dates at the present time potato plants are in various stages of development.

At the same time the colorado beetle presents a great danger for potatoes in many regions where they are cultivated. They can do especially serious damage in the Ukraine, Belorussia, the Central, Central Chernozem, North Caucasus and Volga regions, to the south of the Volga-Vyatka Region and also in the western oblast of Kazakhstan. Because of the agrometeorological peculiarities this spring in a large part of the area the beetles began to come out of the soil 10 to 15 days before the appearance of the potato sprouts. Therefore the fields with the first sprouts were infested to a significantly greater degree than those with later sprouts. These stretches seemed to serve as bait. Therefore it is necessary to conduct an immediate check of all fields in the enterprises, paying special attention to those fields with earlier sprouts. Fields with a colorado beetle population of more than five percent should be immediately treated with insecticides.

It is necessary that specialists on agricultural production boards of oblast executive committees, ministries of agriculture of autonomous republics, rayon boards for plant protection and kolkhozes and sovkhozes quickly organize the work of combatting potato blight and the colorado beetle by all available means. [Moscow SEL'SKAYA ZHIZN' in Russian 17 July 80 p 2]

Potatoes in Bryanskaya Oblast occupy 120,000 hectares, the largest area planted to potatoes in the RSFSR. [Moscow GUDOK in Russian 6 Jun 80 p 1]

Enterprises in Novozybkovskiy Rayon were the first in Bryanskaya Oblast to begin harvesting early potatoes. Dozens of tons of potatoes have been sent to procurement points. Agricultural workers in Bryanskaya Oblast will sell 700,000 tons of potatoes to the State. [Moscow IZVESTIYA in Russian 2 Aug 80 p 2]

Large scale harvesting of potatoes, which occupy more than 100,000 hectares in Bryanskaya Oblast this year, began later than usual. In order to get the potatoes dug out before the onset of frosts work everywhere is being done by large mechanized detachements and links. No less than 685,000 tons of potatoes will be sold to the State. [Moscow SOVETSKAYA ROSSIYA in Russian 17 Sep 80 p 1]

Agricultural workers in Altayskiy Kray yesterday finished the potato harvest. The State has been sold 155,000 tons of potatoes--half again this year's plan. Thereby the potato growers successfully fulfilled the 5-year task and socialist pledges for the final year of the 5-year plan. More than 90,000 tons of loose potatoes have already been sent to many cities in the country. Sales are continuing. [Moscow TRUD in Russian 18 Oct 80 p 1 and Moscow PRAVDA in Russian 18 Oct 80 p 1]

Kemerovskaya Oblast is rightly considered a major potato producer in the eastern part of the country. The pledge by agricultural workers in Kemerovskaya Oblast to sell 180,000 tons of potatoes to the State will be overfilled. Forty thousand tons of potatoes have already been delivered to the Far East, Far North and Central Asia. Deliveries are continuing. In all, for the 5-year plan almost 1 million tons of potatoes will be sold to the State including 80,000 to 90,000 tons over the plan. [Moscow PRAVDA in Russian 27 Sep 80 p 1]

In Kuybyshevskaya Oblast they have begun harvesting potatoes. They will harvest potatoes from an area of 22,000 hectares. In order to avoid losses, work on the potato fields will be completed in a short time--15 days.

In the Komi-Permyatskiy Autonomous Okrug they are harvesting potatoes under difficult conditions. Nonetheless, the pace has picked up markedly in recent days. [Moscow SOVETSKAYA ROSSIYA in Russian 14 Sep 80 p 1]

Agricultural workers in Krasnoyarskiy Kray will harvest 26,630 hectares of potatoes. [Moscow PRAVDA in Russian 5 Oct 80 p 1]

The surplus of precipitation and insufficiency of warmth in the spring and during the potato vegetation period in the majority of regions where potatoes are cultivated delayed their growth, development and ripening. Adverse weather conditions also made for intense infection of the plants by potato blight and bacterial diseases. Potato fields in several regions represent a very mottled picture. Early and early medium ripening varieties have completely finished vegetation and accumulation of growth [nakopleniye urozhaya]. These should be harvested immediately.

Due to the extraordinary waterlogging and increased compaction of the soil the conventional wisdom, which states that after the dying away of the tops, potatoes remaining in the ground for some time are more resistant to mechanical damage and disease and store better, is not justified this year. Therefore delay in harvesting will lead to massive infection by potato blight and other diseases, and to suffocation, which in the last analysis, causes a sharp drop in quality and storability.

Medium and medium late ripening varieties are continuing vegetation. According to data from the Institute of Potato Enterprise the added growth in these varieties amounts to four to eight quintals per hectare per day. On these crop areas it is necessary to keep the tops in a green condition as long as possible, for which it is important to continue the intensive fight against potato blight from the ground and the air. [Moscow SEL'SKAYA ZHIZN' in Russian 28 Aug 80 p 2]

In the permafrost zone in the Kolyma River area of Magadanskaya Oblast agricultural workers have learned how to grow a good potato crop. On the flood plains of the northern rivers they are gathering 100 to 250 quintals of potatoes per hectare. This year local enterprises are significantly overfilling the year's plan for potato sales to the State. Masters of northern crop farming have, during the 10th Five-Year Plan, delivered 12,000 tons of above plan potatoes to the procurement points. [Moscow TRUD in Russian 10 Oct 80 p 1]

In Medynskiy Rayon [Kaluzhskaya Oblast] there are several omissions in potato storage and accounting. The potato harvest in Yukhnovskiy, Babyninskiy, Meshchovskiy, Lyudinovskiy and other rayons is going slowly.

Many potatoes can also be procured from gardens of rural residents. But this work is not sufficiently organized. [Moscow SEL'SKAYA ZHIZN' in Russian 17 Oct 80 p 2]

CSO: 1824

POST HARVEST CROP PROCESSING

UDC: 633.854.78:631.1

METHODS DETAILED FOR PREVENTION OF SUNFLOWER CROP LOSSES

Moscow ZERNOVOYE KHOZYAYSTVO in Russian No 9, Sep 80 pp 32-34

[Article by Yu.N. Buryakov, deputy chief of the USSR Ministry of Agriculture Main Administration of Cereal Crops and for General Farming Questions, and V.F. Abramov, chief of the Oil-Producing Crops Department: "The Harvesting and Quality of the Sunflower Crop"; passages enclosed in slantlines printed in boldface]

[Text] The area occupied by sunflower in our country is in excess of 4.6 million hectares. Sunflower oil accounts for 72 percent of the total quantity of vegetable oil. In 1979 per capita consumption of this oil was 8.4 kilos, which almost corresponds to the scientifically substantiated medicinal norm. Sunflower annually provides 2.3 million tons of oil cake containing more than 750,000 tons of feed protein or almost 40 percent of the quantity of oil cake consumed in the country.

Thus the extent of the economy's provision with alimentary and industrial oil and also feed protein largely depends on the level of production of sunflower seed. However, it has a tremendous economic effect when it is accompanied by ever increasing qualitative indicators. For example, a one percent increase in the protein content in wheat grain makes it possible to additionally produce 1.2 million tons of vegetable protein, which is sufficient to meet the need therefore of more than 28 million people in the course of a year. A one percent increase in the oil content of sunflower enables us to additionally obtain 53,000 tons of vegetable oil, which is the equivalent of the production of sunflower in a volume of 110,000 tons in the Kazakh SSR.

The need for an increase in product quality ensues from the requirements of the basic economic law of socialism. However, as Comrade L.I. Brezhnev has observed, historically, by virtue of the conditions in which we have found ourselves, matters have evolved such that quantitative evaluations have always taken first place. Questions of quality have been of a subordinate nature. Now quantity and quality are a single concept. It may be asserted today that the full use of the achievements of science and technology would make it possible to at least double a high-quality harvest. The indicators of the strain-testing stations and progressive farms of various zones of the country testify to this. The sunflower yield at the strain-testing stations of the Ukrainian SSR on average for the period 1974-1978 constituted 21.1 quintals per hectare, of the Moldavian SSR 21.4 quintals, of Belgorodskaya Oblast 22.1 quintals and of Krasnodarskiy Kray 26.6 quintals per hectare. This is 5.3-13.3 quintals more than the average for this period for the republic, kray and oblast as a whole.

Under the difficult weather conditions of 1979 the "Pobeda" Kolkhoz of Krasnodarskiy Kray's Dinskiy Rayon obtained 30.4 quintals per hectare, the Kolkhoz imeni Gagarin of the Moldavian SSR's Goldyanskiy Rayon obtained 31.6 quintals, the "Pamyat' Lenina" Kolkhoz of Cherkasskaya Oblast's Chernobayevskiy Rayon obtained 32.3 quintals and the Kolkhoz imeni Kalinin of Dnepropetrovskaya Oblast's Novomoskovskiy Rayon obtained 33.1 quintals per hectare. These results testify to the colossal potential of the crop and the great resources which the kolkhozes and sovkhozes of different regions of the country possess.

However, great difficulties connected with subjective and objective causes still stand in the way of a solution of the problem of an increase in the production and quality of sunflower. This applies mainly to the harvesting and preparation of the oil seeds since these processes are the most complex and laborious in the overall complex of operations in sunflower cultivation and the size of the harvest and its qualitative indicators depend primarily on them. It is sufficient to say that labor expenditure on the performance of production engineering operations at the time of the harvesting constitutes almost 70 percent of all expenditure connected with production of the crop.

/To perform these operations within the optimum times and to preserve the high food and fodder properties of the oil seeds and byproducts it is necessary to introduce operations technology of the harvesting of sunflower based on the unification of agrotechnical, engineering, economic and organizational methods./ Implementation of all the scheduled measures with regard for extremely difficult weather and other unfavorable conditions like, for example, rain, wind, the excessive crowding and sparseness of the sowings, the height of plant stand, weed vegetation, destruction of the plants by disease, the disjointed nature of the maturation of the calathides and the poor alinement of the field serves as the basis of this technology. The personnel and material-technical resources must be prepared such that the farms in the northern and eastern areas be ready to harvest the sunflower in difficult weather conditions over 100 percent of the area sown to the crop, in forest steppe areas over 70-80 percent and in steppe areas over 60-70 percent of the sown area.

/The periods, duration and quality of the threshing are a principal component of the operations technology of the harvesting of sunflower./ The biological singularities of this crop demand that the harvesting be performed over 5-7 days; only on this condition is it possible to reduce seed losses to a minimum. According to data of the All-Union Scientific Research Institute of Oil-Producing Crops, harvest losses amount to 4.1 percent for the country as a whole when the harvesting is 5 days behind the optimum time and 11.4 percent with a delay of 15 days. And 29.5 percent of the harvest is lost in the Volga area with a 2-week delay in the harvesting.

In order to assess the losses incurred by the country's kolkhozes and sovkhozes it is sufficient to adduce the following calculation: over an area of 4.6 million hectares with a yield of 12.1 quintals per hectare (average actual yield in 4 years of the 10th Five-Year Plan) the oil seed shortfall if one percent of the harvest remains in the field constitutes more than 55,000 tons.

Owing to an insufficient amount of motor transport servicing the combines, the harvest lasted 30 days last year in Krasnodarskiy Kray. Overextended harvesting times, harvest losses and a reduction in the quality of the harvest were permitted in Orenburgskaya Oblast, where the load per harvesting machine exceeded 130 hectares, that is, was twice the norm.

In a number of oblasts the harvesting dragged on for up to 2 months. The main reason for this, of course, was not that there was a shortage of specialized equipment (particularly PSP-1.5 attachments and drying units) but chiefly that the organization of the harvesting operations was unsatisfactory. As a result seed losses frequently amounted to 8-10 and more percent and there was a sharp reduction in product quality. For example, in 1979 more than 1.3 million tons or almost one-third of procured sunflower arrived at the grain-acceptance centers with a moisture and weed content above the restrictive conditions. Belgorodskaya and Penzenskaya oblast farms sold the state unjustifiably large consignments of substandard seeds (particularly imperfect seeds). This is why it is very important to correctly determine the times of the start and duration of the harvesting. For this it is necessary to organize the continuous observation of the ripening of the sunflower. Early periods of the harvesting with a moisture content of the achenes of 18-20 percent are advisable on the majority of farms which have a good material-technical base, that is, have cleaning-drying complexes and mechanized threshing floors. This will make it possible to reduce losses and additionally harvest roughly 2 quintals per hectare. It is essential in the harvesting production line to clean and dry the seeds to a moisture content of 12 percent to prevent their spoilage.

If a start is made on harvesting the sunflower upon the achievement of a moisture content of the oil seeds of 12-14 percent, operations over the entire area should be completed in 5-7 days. For this it is necessary to increase the combine load to 50-70 hectares.

/The next measure of operations technology is the preparation of the material-technical facilities, particularly the grain combines and cleaning-drying machinery./ The grain combine must be made completely ready and adjusted technologically. Particular attention is paid here to the adjustment of the

PSP-1.5 and 34-103A attachments. Losses from loose seeds and calathides should not exceed 2.5 percent, the cleanliness of the seeds should be no less than 95 percent and their overall impairment should be no more than 1 percent. To reduce the crushing of the seeds the rotation frequency of the drum of the thresher is reduced to 320-340 r.p.m. with a moisture content of the seeds of 16-20 percent and to 280-300 r.p.m. with a moisture content of 12-14 percent.

/An important component of operations technology is preparation of the fields./ Eight-ten days prior to the start of the harvesting it is necessary to determine the biological yield of the crop and the condition of the sown areas (density and height of the plants, weed content and so forth). The the tracts are mown laterally, the headlands are harvested and transporting-loading arteries 8.4 meters wide are plowed through. The fields are broken up into plowed strips of this area to insure the 2-day operation of a single combine. It is also essential to improve the country roads and approach paths, determine the sequence of the harvesting of the fields and draw up itineraries of the movement of the combines.

/The stocks of agricultural machinery make it possible, given the scientific organization of labor and the highly productive use of equipment, to bring together in a single stream all links of the combine--threshing floor--processing enterprise production line, which has already been honed in practice, and insure the performance of harvesting operations in the best agrotechnical periods. For this reason the organization of operation of the units in the harvesting is a very responsible measure of operations technology./ The harvesting of sunflower by comprehensive detachments consisting of two-three harvesting-transportation links is the most efficient. Each of them includes 4 combines, 8 tractor trailers, 4 wheeled tractors and 6 motor vehicles.

To preserve the quality of the seeds it is essential to clean them right away in the harvesting production line, preventing their accumulation on the threshing floors. Links are being created in the comprehensive detachments for preparing the fields for harvesting, cleaning and drying the seeds, the application of fertilizer and the subsequent tilling of the soil and for the engineering and routine servicing of the units. One such detachment harvests the sunflower in the optimum times over an area of 600 hectares with a harvest of 20 quintals per hectare.

/The final stage of the operations technology of production-line harvesting is the post-harvest treatment of the seeds./ In order to obtain high-quality sunflower and have an opportunity to store it for a protracted period it is essential to dry out the commercial seeds to a moisture level of 12 percent and the seed material to a level of 7 percent. It must become a law on each farm for the harvested seeds to be cleaned and dried before the following morning. This is required by the biological singularities of the modern strains. They are high in oil content and of low huskiness. A heap of sunflower is of high biological activeness and spoils rapidly with an increased moisture content, even during short-term storage. An increase in the acid count in the oil and spoilage of the seeds at the threshing floors during storage are caused mainly by the reduced huskiness of the seeds. The husk's protective properties are quickly lost in a period of unduly extended harvesting or with the piling up of the seeds at the threshing floors owing to an insufficient number of repositories on the farms and drying units in the procurement system. The technological effectiveness of the storage of these seeds is extremely low and does not, as a result of the narrowly focused seed breeding, correspond today to the farms', particularly the grain-acceptance enterprises', provision with materials and power.

The oil's acid count depends to a considerable extent on the moisture content of the seeds and the duration of their storage (All-Union Scientific Research Institute of Oil-Producing Crops):

Seed moisture content	10-12%	16%
Initial acid count (milligrams of KON [expansion unknown]	1.17	1.55
After 1 day	1.02	1.81
After 2 days	1.46	1.91
After 3 days	1.76	2.24
After 4 days	1.85	2.54

For example, in the oil produced from sunflower in the fourth quarter of 1970 the acid count constituted 2.71 milligrams of KON, yet in obtaining oil from this same raw material, but now in the first quarter of 1971, that is, after protracted storage, it amounted to 3.48 milligrams in 1973 (fourth quarter) and 3.61 milligrams and 5.1 milligrams of KON in 1974 (first quarter) correspondingly. For obtaining sunflower oil suitable for alimentary purposes the acid count should not exceed 2.5 milligrams.

For this reason it is necessary to insure the high-quality preparation everywhere within the established times of the KZS-type grain cleaning-drying complexes, the ZAV units and the OVP-20A, SM-4 and OS-4.5A machines, organize special links and insure round-the-clock operation at the threshing floors.

The spread of harmful fungous diseases during the formation of the harvest is observed in certain years owing to rainy weather which sometimes, according to data of scientific establishments, account for harvest losses of 20-50 percent and are responsible for a 2.8-percent reduction in the oil content and a 15-20-percent reduction in the germination of the seeds. Much labor and resources are expended on the fight against disease, but the adopted measures are frequently insufficiently effective owing to the nonobservance of individual methods. However, as the practice of the foremost farms shows, it is possible to considerably reduce the harmfulness of gray mold and storage rot and other diseases. Upon the spread of disease it is essential to begin the harvesting when the moisture content of the achenes is 18-20 percent, and the cleaning and drying of the seeds must be performed immediately after the harvesting. It is necessary to make more extensive use of the preharvesting standing drying of the sunflower plants--dessication by way of treating the sown areas with magnesium chlorate (15-20 kilos per hectare), reglon (2-3 kilos per hectare) and [plav] (50 kilos per hectare).

Cleansing operations are carried out on the seed-growing areas, removing all the plants affected by disease. The seeds are carefully cleaned and calibrated on grain-cleaning machines and 2-3 months prior to the sowing are treated with tetramethylthiuram disulfide or [fentiuram] (3-4 kilos per ton).

/Careful systematic supervision and evaluation of work quality are obligatory components of the operations technology of the harvesting and seed treatment./ It is essential to devise on every farm a precise scientifically substantiated quality-control system which incorporates the quality parameters of the technology of each operation and the principal types of supervision and verification: plan-periodic, extraplan, spot-check and repeat. The extreme necessity of this is caused by the fact that in the cultivation process, according to the data of scientific establishments, harvest losses owing to the low quality of the plowing and other procedures amount to 30-40 percent, although they are invisible, and determining them under production conditions is practically impossible. For evaluating the quality of the harvesting and treatment of the oil seeds it is necessary to organize a monitoring service made up of brigade leaders, managers, specialists and people's control workers.

Big and responsible tasks also confront the farmers' partners--the workers of the procurement and processing organizations. The times of the harvesting and the quality of the oil seeds will largely depend on how they prepare the repositories, grounds and cleaning-drying units and the help they render the farms in the continuous acceptance of sunflower and in the additional work thereon to bring it up to the necessary quality standards.

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AGRO-ECONOMICS AND ORGANIZATION

NEW FORMS OF ORGANIZING PRODUCTION IN THE POULTRY INDUSTRY

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[Article by K. Karyukina, candidate of agricultural sciences, director of the economics department of the All-Union Scientific Technical Institut for Poultry, titled: "New Forms of Production Organization in Poultry Farming"]

[Text] The resolutions of the CPSU Central Committee and the USSR Council of Ministers titled "On Increasing the Production of Eggs and Poultry Meat in the Suburban Zones of the Major Cities and Industrial Centers" (1963) and "On Organizing the Production of Eggs and Poultry Meat on an Industrial Basis" (1964) marked the beginning of an organized transition for the entire branch of poultry farming to an industrial basis. Ptitseprom of the USSR, the directorate established for the poultry industry, consolidated the specialized breeding concerns, industrial concerns and system of scientific-research institutes. The material-technical base of the poultry concerns was significantly strengthened, and the productive forces of the branch were developed further.

Major resources were identified for construction and reconstruction, new types of machinery and equipment and highly productive crossbreeds of poultry were either imported or produced domestically. The industrial production of combination feeds, protein, vitamin, mineral and other additives to poultry feed was increased. New technologies were developed and introduced for the production and processing of eggs and poultry meat, and recommendations were developed for improving production and labor organization. This ensured accelerated poultry production, chiefly by increasing the amount of production done in the specialized concerns of Ptitseprom. Their shares of the eggs and poultry meat produced in 1979 in the public sector came to 86 and 82 percent, respectively.

Intensifying specialization and increasing its level of concentration based on interfarm cooperation and agro-industrial integration are the primary directions for us to take in raising the efficiency of poultry farming.

Branch and intrabranch specialization in the poultry industry were facilitated by intensifying the division of public labor and also by the fact that the respective industrial branches have further increased their production of building structures, machinery, equipment, combination feeds, and other production resources for the poultry industry. The efforts rendered to provide spare parts, transportation, repair, technical and other types of support are expanding annually.

When Ptitseprom of the USSR was established, the average level of poultry specialization among the concerns in this system was less than 50 percent. The development of branch and intrabranch specialization has led to the establishment of specialized concerns for breed production, eggs for consumption, and meat of the individual types of poultry. The development of technological specialization and the organization of appropriate types of concerns for producing the separate types breeds (state poultry breeding plants, first and second class reproduction facilities), for raising the day-old young (incubatory poultry stations), for raising young fowl for replacement, for maintaining laying hens of the industrial herd to produce eggs for consumption, and for raising the separate types of young fowl for meat (poultry plants with respective specialization) are accelerating.

As a result the average level of poultry specialization in the Ptitseprom system increased to 88 percent, and the number of specialized poultry concerns (without incubatory poultry stations) grew from 576 to 1,319 between 1965 and 1978. The average number of head of adult fowl per farm in the Ptitseprom system grew during the period indicated from 44,000 to 138,000. This promoted improvement in the economic indicators for the activity of the Ptitseprom concerns. (Table 1)

The significant variations among the indicators for the republics indicate great reserves for further economic growth. Moreover, in many concerns the levels of specialization and production concentration do not correspond to the increased potential of the material-technical base, and they restrain the further growth of productive forces.

In the RSFSR a significant portion of the poultry concerns own land used in agriculture: 27 percent have up to 300 hectares of land, 10 percent have 300-500 hectares, 12 percent have 500-1,000, 11 percent have 1,000-2,000, and 23 percent have over 2,000 hectares. Only 17 percent of the concerns own only the land which is under their buildings. On the average a poultry concern will have the following agricultural holdings: in the USSR as a whole--1,748 hectares, in the Ukraine --3,446, in Kazakhstan--2,689, in Estonia--3,782, in Lithuania--2,585, in the RSFSR--1,538, and in such republics as Belorussia--338, Latvia--148, and Moldavia--38 hectares. A large portion of the land belonging to the poultry concerns is used for the production of vitamin grass meal. Experience shows that for a production association or group of poultry concerns in an oblast or kray this is more efficiently done on an interfarm basis rather than at every poultry concern. According to the calculations done by the economics department of the All-Union Scientific Research Technological Institute for Poultry 4,000 hectares of arable land under feed crop rotation are needed to satisfy the requirements for vitamin grass meal of 1 million laying hens with a brood of young, and for 10 million broilers with parent herd and replacement young--9,300 hectares.

A significant portion of the poultry concerns possesses longhorned cattle, and some--pigs and sheep. Therefore, branch specialization must be actively intensified at such concerns. The reserves for intensifying intrabranch specialization are also great. In Ptitseprom of the RSFSR only 56 percent of the concerns specialize in keeping one type of poultry. The majority of such concerns have four basic elements (the parent herd, the incubator, replacement young, and laying hens of the industrial herd); that is, their level of specialization is rather low.

Table 1.
Operational Efficiency of the Farms
in the Ptitseprom System

	1975--USSR	1978		
		USSR	For the Republics	
			Minimum	Maximum
Level of specialization, in percent	86	88	72	98
Stock of adult poultry per farm, in thousands of head	135	138	49	182
Gross production, in thousands of rubles:				
Per worker	8.6	15.2	7.8	25.0
Per management worker	80.0	109.6	42.0	159.0
Cost of production:				
1000 eggs, in rubles	59	60	45	94
Quintal of weight gain, in rubles	185	172	112	288
Feed expenditures, in quintals of feed units:				
Per 1000 eggs	2.0	2.0	1.7	3.4
Per quintal of weight gain.	4.2	4.2	3.0	7.1
Gross production per 100 rubles of primary stocks, in rubles	63	71	34	92
Profit:				
Per worker, in thousands of rubles	2.2	4.0	0.4	12.0
Per management worker, in thousands of rubles	21.0	28.7	2.6	61.5
Per 100 rubles of primary stocks, in rubles	16.4	18.7	1.8	42.4

It should be noted that the indicator for specialization, determined as the proportion of poultry production sold in the total marketable production of a concern, does not reflect the nature of technological specialization. This indicator should be complemented by one showing the proportion of basic production sold in the field in which the farm specializes. The introduction of this number into the evaluation indicators will orient the specialized concerns toward increasing their basic production and diminish related production. At poultry plants engaged in egg production this means extending the time over which laying hens are used, increasing the portion of large eggs in total egg production, improving the use of incubation eggs in the broiler concerns and production associations, increasing the number of young raised per laying hen in the parent herd, raising the average daily weight gain, and improving the manner in which the stock are kept.

An analysis of this specialization must be combined with an analysis of the organizational-productive structure of the concerns and with a determination of the number of their basic and subsidiary elements. In practice the number of basic elements in the separate concerns is reduced from 10-12 to 1-2 when intensifying intrabranch and intrafarm specialization, and a portion of their subsidiary elements is put on an interfarm basis.

The intensification of specialization creates the conditions needed for increasing production concentration and for improving the economic indicators of the farms' activity. (Table 2)

Table 2.
Results of the Activity of the Concerns in Ptitseprom
As Related to their Size (1978)

	Groups of Farms, by Thousands of Head of Laying Hens					
	Up to 50	50-100	100-200	200-400	Over 400	Average
Average size of the concern, in thousand head	37.4	72.3	141.4	285.2	542.3	186.9
Level of specialization in poultry farming, in percent	83	84	89	92	94	90
Stocks available, in thousands of rubles	14.1	14.0	19.9	24.8	27.8	21.7
Labor productivity, in thousands of rubles	9.1	9.9	14.9	20.7	23.1	17.3
Production cost of 1000 eggs, rubles	71.9	68.2	63.6	53.8	51.1	56.7
Stock effectiveness (per 100 rubles of primary stocks), in rubles	64.6	70.9	74.9	83.6	83.3	79.6
Profit per worker, in thousands of rubles	1.5	1.7	3.5	6.8	7.7	5.0
Profit per 100 rubles of primary stocks, in rubles	10.4	12.4	17.5	27.4	27.7	23.1
Profitability, in percent	15.7	18.3	27.1	43.4	47.0	36.6

Despite the obvious advantages of the large concerns over the small ones, the proportion of the latter is still high. Thus, around 50 percent of the concerns engaged in egg production in the RSFSR have fewer than 100,000 laying hens, which is significantly lower than the optimal level, given the weak development of technological specialization. Here it is appropriate to note that the level achieved in poultry production satisfies 85 percent of the population's requirements for eggs and about 50 percent of their demand for meat. Such a situation determines the particulars for the development of the egg and meat sectors of the poultry industry in the near and longer term.

The intensive factors will be the decisive ones in developing the poultry industry: the reconstruction of concerns on a modern technical basis, increasing poultry productivity, and increasing the quantity and reducing the cost of producing eggs in existing production areas.

The meat sector of the poultry industry now requires more significant capital investment in the organization of new concerns. They have been identified in a special resolution of the CPSU Central Committee and the USSR Council of Ministers titled "On Measures to Increase the Production of Poultry Meat" (1977). Concurrently it is envisioned to make use of the intensive factors: the reconstruction of operational sites, the transition from open to cooped maintenance and raising of the poultry, the use of highly productive crossbreeds, a reduction in the time needed to grow the young for meat by increasing their rate of growth and improving the remuneration for feed.

Taking these particulars into account, the methods were determined whereby specialization can be intensified and the level of concentration in the poultry industry can be raised. They are: the construction of new large-scale concerns, chiefly ones in the meat sector, for producing 3-15 million broilers, 1-6 million ducks, 250,000-500,000 geese or turkeys; in the egg sector--for producing 250,000 to 1 million laying hens, the expansion of existing concerns by incorporating smaller ones into them, additional construction, reconstruction with the replacement of equipment with more productive types, an increase in such qualitative indicators as productivity, poultry preservation, production quality, and the organization of production associations. Production concentration must be analyzed and planned by taking the level of specialization into account. In doing so it is important to orient the concerns and associations toward increasing the size of their single-type production.

Concentrating production and intensifying the poultry concerns' specialization in the separate phases of the technological process, given an overall high level of branch and interbranch specialization, require fundamental improvements in management and precise coordination of the links in the chain: from material-technical provisioning to production to processing and the marketing of production. These tasks can be successfully solved on the basis of interfarm cooperation.

Interfarm cooperation is conditioned by growth and improvement in the material-technical base, the development of an infrastructure, an increase in management potential. Moreover, it is characteristic that the scale of interfarm cooperation in the poultry industry is not limited to the framework of an administrative rayon but sometimes extends beyond oblast borders. The scale is determined by taking into account the integrated development of poultry farming on all categories of farms, based on the territorial-branch principle. The organization of systems of cooperating farms composed of specialized units is becoming typical. The specialized concerns in Ptitseprom are gradually assuming the most complex functions regarding poultry reproduction in such systems. Such systems have been established and are operating successfully in Krymskaya, Odesskaya, Dnepropetrovskaya Oblasts, Krasnodarskiy Kray, Moldavian SSR and elsewhere.

The following may be considered basic prerequisites for establishing and developing production associations: consolidation of the production base and improvement in providing the poultry concern such material-technical resources as equipment, feed, and other means of production; the economic need to intensify technological specialization, basic production concentration, and the centralization and strengthening of a number of subsidiary, service elements and of the basic management services, based on cooperation among groups of concerns; compact territorial accommodation of many poultry concerns in the zones of the major cities and industrial centers and in adjoining administrative rayons at relatively small distances from each other; an increase in personnel qualifications; the development of a hard-surface road network, of specialized forms of transportation, and of communications and organizational equipment, which enhances the capabilities and quality of management.

By the beginning of 1980 more than 100 production associations had been established in the Ptitseprom system; their membership included 28 percent of the farms. The associations produced around one-third of the gross production of, and in terms of economic indicators surpass the results achieved by, concerns which do not belong to the associations.

We have classified the poultry production associations according to their specialization (egg, broiler, duck, goose, turkey, mixed egg and meat, or for the production of two types of poultry meat), the legal status of their member concerns (on a single balance, maintaining judicial autonomy, or mixed), form of property (state or state-kolkhoz), the nature and scale of their activity, and the particulars of their management system.

Those production associations are most efficient and promising which specialize in the production of eggs or the meat of one of the types of poultry and which include 4-6 concerns located in adjacent administrative rayons. Moreover, each concern specializes in one or two phases of the technological process: for example, in the production of incubation eggs and in incubation, the raising of replacement young fowl, or the production of eggs for consumption. Sometimes an incubator is placed on a reproduction farm or in a concern engaged in raising replacement young fowl; or, the raising of these young fowl may be combined with the maintenance of laying hens of the industrial herd.

At present and for the near future it will be advisable to have, within the framework of each association, closed loop production based on cooperation among narrowly specialized poultry concerns--from the second class reproduction facility to the sale of finished products to the commercial network or directly to the consumer. Breeding plants and first class reproduction facilities belong, as a rule, to the selection centers. Gradually, centralized elements are being established in the production associations: for the slaughter and processing of poultry and utilization of the remains; for the processing of nonstandard eggs; for producing spare parts for equipment and for fashioning crates and packaging material; a zoological/veterinary laboratory with a veterinary dispensary; a construction and installation administration with a design bureau; a feed shop and warehouse for combination feeds; a fuel and lubricant base; a training school; an information/computer center; proprietary stores, restaurants and the like.

Many of these subdivisions can and should extend beyond the limits of one production association and serve several concerns and associations. Thus, in the Glebovskoye Poultry Production Association in Moskovskaya Oblast the plant for producing powdered eggs processes nonstandard eggs not only for its own association but for the Brattsevskoye Association and the Kuntsevskaya, Novo-Petrovskaya and Krugovskaya Poultry Plants too. A specialized mechanized transportation unit in the Moskovskaya Oblast Poultry Plant Directorate provides a great number of services to all the poultry concerns and production associations in the oblast. Both domestic and foreign experience must be more actively utilized, and the incubators, egg sorting and packing shops, poultry slaughterhouses, waste utilization shops, and others should be put on an interfarm basis.

Production efficiency indicators improve as the size of the production associations increases. (Table 3)

Table 3.
Production Efficiency of Production Associations
Engaged in Egg and Meat Production
As Related to their Size(1978)

	Groups of Production Associations by Gross Production(in millions of rubles)					
	Up to 5	5.1-15	15.1-30	30.1-40	Over 40	Average
No. of Production Associations	5	26	22	5	3	61
Average size of a Production Association in millions of rubles	4.3	10.1	20.0	35.7	47.7	17.1
Gross Production per Worker	9.3	10.0	13.5	13.5	17.0	12.6
Profit Earned per Worker, thousands of rubles	0.5	1.9	3.8	4.4	6.2	3.4
Profit Earned per 100 Rubles of Primary Stocks, in rubles	4	13	22	26	33	21
Profitability, in percent	5.6	22.7	37.0	46.5	52.3	35.6

Currently the following should be considered the efficient sizes for production associations, in terms of poultry stock: from 1 to 2 million laying hens, 5 to 25 million broilers, 1.5 to 5 million ducks, and 250,000 to 1 million turkeys or geese.

The scale of the production associations' operations is largely determined by territorial considerations and the related opportunities for management. Production associations and concerns which are located in one or two-three adjacent administrative rayons are the simplest to manage. However, experience shows that the development of a hard-surface road network, of the means of communications, of transportation, and an increase in personnel qualifications expand management potential and permit the organization of production associations and concerns which are located in 10-12 rayons of an oblast or republic. In this way production associations on the oblast and republic levels can be created which are subordinate to a republic or all-union directorate for the poultry industry.

The scale of the activity of the production associations and their size are tightly linked to the legal status of the concerns that compose them. Grouping production associations by this criterion shows the advantages of those associations in which either some or all of the concerns have no judicial autonomy. (Table 4)

Table 4.
Production Efficiency As Related To the
Legal Status of the Concerns in
the Production Associations (1978)

	No. of Production Associations	Gross Production Per Worker, in R1000	Production Costs (rubles)		Stock Effectiveness, per R100 of Stock, in rubles	Profitability, in percent
			1000 Eggs	Quintal Weight Gain		
With judicial autonomy	50	12.1	61	171	69	25.8
Mixed and On a Single Balance	30	13.6	52	153	82	42.1
The Latter as a Percent of the First Group	--	112.0	87	89	119	----

In practice the concerns in the majority of the production associations retain their economic independence and the rights of a judicial person. The prospect is that, with an increase in the scale of production and an increase in the distance between concerns such a situation will, apparently, persist. However, this must not hinder the intensification of specialization in the individual concerns, or the efficient centralization of a number of their elements and management services.

The intensification of specialization in the basic production of the separate concerns, the transition of their subsidiary elements to an interfarm basis, an increase in the potential for management, and an improvement in material-technical provisioning create real grounds for granting the rights of a judicial person only to the chief concern, while maintaining the economic independence of all its elements. Moreover, it is important that management accounting potential be more fully utilized in the associations.

The increase in the number of state-kolkhoz production associations is of socioeconomic importance. In them specialization and the productive links are built according to a single plan, and the Ptitseprom concerns basically assume the functions of reproduction. Particular development of such associations has occurred in Latvia, Lithuania, Krasnodarskiy Kray, and a number of the oblasts in RSFSR and the Ukraine. Such associations should dominate in the zones where poultry farming on kolkhozes has developed well.

Interkolkhoz poultry plants and incubatory poultry breeding stations are one of the important forms of interenterprise cooperation; thanks to intensification they have gone to year-round production. Their size has increased, and their production efficiency has improved. They are most widespread in the Ukraine. Thus, in Zaporozhskaya and other oblasts, for example, rayon interkolkhoz poultry plants have been established, based on the kolkhoz farms. They have significant territorial separation among their elements. In the past few years it has been normal that this form of cooperation extend beyond the borders of an administrative rayon, that interkolkhoz oblast poultry plants be established.

A developed network of production links in the oblast, kray, and republic is characteristic of contractual cooperation. The relationships developing in this process may be temporary in nature and require more effective organization and management. In this form of cooperation the coordinators participate in the allocation of material-technical resources, including the feed, breeding eggs, and the young fowl; they render assistance in organizing the technological process, in training the personnel, in organizing the marketing of production and so forth. However, even within the Ptitseprom system one finds significant disconnection in the operations of the breeding and industrial concerns, certain disproportions in their size, and inadequately justified, imprecise attachment of industrial concerns to breeding ones. This leads to a large number of long-distance, inefficient shipments of breeding production, the violation of supply plans in regard to time, quantity, and quality, and ultimately to the underutilization of production capacity and a decline in economic performance.

There is even greater disconnection between the Ptitseprom system and kolkhoz poultry farming. Poultry farming in these two systems sometimes develops in parallel ways, apart from each other. This leads to a situation where the kolkhozes establish their own, rather small reproductive farms and experience great difficulties in organizing poultry reproduction. The level of material-technical provisioning and the quality of feeds and technology are, as a rule, significantly lower in the kolkhoz system than in the state system.

All forms of interfarm cooperation need to improve their planning, management, and material-technical provisioning; to provide economic justification for the selection of their organizational forms, specialization, and structure of their concerns and production associations; and to improve the economic interrelationships among participating farms in the cooperative. The resolution of the CPSU Central Committee titled "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality" refers to the need for long-term, comprehensive planning using scientifically based norms and for increasing the responsibility for fulfilling the plans.

The development of interfarm cooperation must be envisioned in plans for the integrated development of poultry farming in all categories of public sector farms and in the population at large. It is completely unacceptable that production associations and other forms of cooperation be established without economic justification. The composition of the enterprises, their specialization, structure, productive links, chief concern, and system of management should be defined in this economic justification. The centralization of subsidiary and service elements must be more broadly foreseen and effected when intensifying the specialization and strengthening the concentration of basic production.

In many production associations the intensification of specialization and reconstruction of concerns drags out for 6 to 10 years, which restrains the process of increasing production efficiency. The subsidiary elements are being centralized and transitioned to an interfarm basis even more slowly.

In justifying the need for and establishing production associations and a system of enterprises operating on a cooperative basis it is essential to reach efficient proportions in the size of the breeding and industrial concerns, to produce an adequate quantity of and fully utilize breeding production, to efficiently consolidate farms, and to reduce the distances of shipments.

Comprehensive planning of specialization, concentration and cooperation is particularly important in connection with an increase in the number of kolkhoz and sovkhoz farms and subsidiary enterprises which produce poultry products for internal consumption. They must be specialized to produce finished products and be consolidated with the appropriate specialized concerns and production associations to procure either day-old fowl of those poultry types raised for their meat or replacement young fowl used in the egg sector. This relates fully to the population's personal subsidiary enterprises as well.

Deadlines must be established, capital investment identified, and control established over its efficient use in order to make the transition to a planned structure for the production associations.

In order to improve the management of interfarm cooperation it is necessary to make the establishment of poultry councils at the republic, kray, and oblast levels a broader practice.

A number of production associations are not fulfilling the condition required for them to function as a single managerial organism: the organization of planning, accounting, and accountability via the chief concern alone, which is provided for in the Statute on Production Associations in Agriculture. However, the farms which comprise the associations continue to be subordinate to trusts for the issues of planning, accounting, accountability and in other ways, bypassing the chief concerns. As a result the point in creating production associations is lost. For years they are not made into a single economic complex, efficiency is not increased, and management is not facilitated in the trusts.

It should be noted that the tables of organization and organizational norms for poultry concerns do not fully correspond to the specific nature of the production associations. The All-Union Scientific Research Technological Institute for Poultry and Ptitseprom of the USSR have developed a draft for tables of organization and organizational norms for such production associations; it is desirable that they be confirmed as quickly as possible. Remuneration for the directors and specialists working in the associations must be improved.

One of the important issues in interfarm cooperation is that of improving material-technical provisioning, the supply of feed, and the equalization of production conditions in all categories of farms in the public sector. It is advisable that the distribution of material-technical resources to the kolkhozes and interkolkhoz concerns be done through the Ptitseprom system. Latvia and other republics have long years of experience in this matter. The leading role of the Ptitseprom concerns must be strengthened in other areas involving cooperation as well. The concerns in the Ptitseprom system should assume full responsibility for poultry reproduction in all the cooperating units.

The organization of productive links, and in particular supply discipline, is one of the issues in cooperation which is being poorly resolved. Not all of the links are regulated by contract, and instances of contract and supply schedule violations occur, in terms of deadlines, quality, and quantity. Mutual responsibility of the partners in the cooperatives has to be increased.

A system has still not been developed for assigning plans to and accounting for the production done by interfarm cooperatives. Experience shows that the procurement plan should be assigned to those farms which produce the eggs and raise the young fowl for meat, and that they are the ones for whom the given production should count.

The economic interrelationships among the participating farms in the cooperatives need improvement. The existing prices guarantee the highest profitability for producing eggs for consumption and for raising broilers; significantly less is provided for producing day-old young and breeding eggs; and the least--for raising replacement young fowl. Production associations can use calculated prices and directly redistribute profit. The state prices require further improvement in order to create relatively equal conditions for concerns and production associations having different specialization. All this will permit us to solve the important problems involved in specialization, concentration, and interfarm cooperation in a more substantiated and persistent way, and thus, to increase the efficiency of poultry farming.

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AGRO-ECONOMICS AND ORGANIZATION

INTERBRANCH TIES, INCREASING ROLE OF BARTER DISCUSSED

Moscow ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 8, Aug 80 pp 33-34

[Article by V. Struchalin, post-graduate student of VNIIZ [All-union scientific research institute of grain and grain products]: "Interbranch Ties and the Increasing Role of Barter"; passages enclosed in slantlines printed in boldface]

[Text] /Significance of Improving Interbranch Ties in Agriculture and in Procurement/

The resolution passed in 1979 by the CPSU Central Committee and the USSR Council of Ministers, "Concerning Improvements in Planning and a Strengthening of the Effectiveness of the Management Mechanism on Raising Production Efficiency and Work Quality," is directed at the continued improvement of production relations in a mature socialist society such as that built in our country and at bringing them into direct correspondence with the level of development of production forces.

The improvement in interbranch ties in agriculture and procurement is one of the most important directions in production relations. It will be called upon to create conditions for the continued dynamic development of production forces in a socialist society.

In his speech at the November 1979 Plenum of the CPSU Central Committee, Comrade L. I. Brezhnev emphasized the necessity of close ties in the development of agriculture and procurement. The improvement in interbranch ties between agriculture and procurement not only encourages an increase in agricultural production output, it creates the conditions for the efficient use of this production, for achieving total preservation of the products and for satisfying the needs of the Soviet people better.

One of the most important functions of state procurement is the organization of barter between industry and agriculture.

V. I. Lenin examined barter between industry and agriculture in socialist society as the economic basis for a political union between the working class and peasants and as the most important link in the economic and political activities of the Soviet state. This definition of barter is intensified in a developed socialist society.

This article will examine problems in improving one form of barter between agricultural and procurement enterprises, namely the exchange of grain for mixed fodder.

/Increasing the Role of Exchanging Grain for Mixed Fodder/

This form of barter has existed for a long time within the procurement system. However, at the present stage of development of our economy its significance is radically altered.

It is essential to significantly expand the grain raw materials base for the continued development of the state mixed-fodder industry. The development of barter operations is directed at creating a dependable raw materials base for the state mixed-fodder industry.

For the successful realization of the goals set by the party and state on the significant growth in grain volume for mixed-fodder purposes, in our opinion, it is essential to supplement the existing system of contracting for grain with a division regulating the exchange of grain for mixed fodder. Contracts should reflect the responsibilities of enterprises selling grain in exchange for mixed fodder as well as those of enterprises within the procurement system who sell mixed fodder in exchange for grain. There must be an agreement on the assortment of mixed fodder, the delivery dates and the costs.

All of this will render to contractual relations mutual responsibilities and increase stability in the work of agricultural as well as of procurement enterprises. At the same time a foundation will be laid for direct long-term ties between enterprises and procurement and mixed-fodder enterprises.

On this basis the latter will receive a stable, ever-growing raw materials base and order will be brought to the sale of mixed-fodder.

The orientation toward a definite circle of consumers will enable us to increase the degree of specialization of mixed-fodder enterprises and to consider the needs of farm enterprises to a greater degree since they are the consumers of mixed-fodder. Undoubtedly this will have a positive effect on final national economic results in the considerable growth of effectiveness of public animal husbandry.

Thus, at the present stage of economic development the exchange of grain for mixed fodder must become one of the most important sources for amassing grain raw-materials resources for the state mixed-fodder industry and for supplying mixed fodder to agricultural enterprises and associations. The existing barter conditions and the system of wholesale prices that is in use for grain raw materials creates the incentive in enterprises to increase barter because these prices are higher than procurement prices by a factor of 1.2.

The role of barter is also important in the complex of measures to combat grain losses, since an increase in the amount of grain that is stored and processed within the procurement system enables us to bring losses down to a minimum.

/Joint Capital Investments/

In connection with the changing role of barter there is great urgency in solving the problem of developing the material-technical foundation of procurement on the basis of joint capital investments by agriculture and procurement. In accordance with the goals of increasing the production of mixed fodder it is planned to begin the construction of interfarm enterprises in a number of union republics to produce mixed fodder. These enterprises will include elevators.

This form of interbranch ties is very promising because it is an important step toward creating the prerequisites for the transition to a single technological base in the complex of work with grain. It also presupposes considerable changes in the development of forms of ownership of the means of production in the sphere of grain storage and processing. These changes will be in the direction of a single common ownership.

The senior specialists of USSR Gosplan, G. Yelistratov, I. Kolyadin and I. Yakunin, have made a proposal on the expediency of the transition to a single state-kolkhoz base for the partial processing, storage and treatment of grain for mixed fodder.

They came to their conclusion on the basis of an analysis of the existing situation regarding the organization of grain storage and processing operations. At the present time these operations are conducted separately in agriculture and in the enterprises of the USSR Ministry of Procurement.

The authors of the article point to the fact that "grain that is earmarked for the state is first cleaned and dried directly in the enterprises and then is again subject to processing in the grain-reception enterprises. This requires the parallel development of a material-technical base and results in the dispersal of efforts and resources as well as in the inefficient use of machines and equipment.* They present examples of how in a number of rayons in the country at the present time the building of large-capacity enterprises for the storage and processing of grain has begun on the basis of joint capital investments and interbranch ties between agriculture and procurement.

Thus, joint capital investments are an important direction in the gradual transition to a single system of industrial grain storage and processing.

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*"Uvelicheniye proizvedstva, sokrashcheniye poter' i ratsional'noye ispol'zovaniye zerna--klyuchevaya problema sel'skogo khozyaystva," ["Increasing Production, Decreasing Losses and the Efficient Use of Grain--a Key Problem in Agriculture"], by G. Yelistratov, I. Kolyadin, I. Yakunin, PLANOVOYE KHOZYAYSTVO No 3, 1979 p 37.

/Centralized Deliveries of Grain and Mixed Fodder/

The improvement in interbranch ties between agriculture and procurement includes questions of improving the shipment of grain and mixed fodder.

The very progressive centralized delivery of mixed fodder is not yet playing the role assigned to it despite some development. The development of barter operations creates more favorable prerequisites and at the same time requires the accelerated introduction of centralized mixed-fodder deliveries. These prerequisites consist of the fact that barter operations that are put on a stable plan and contractual base secure stability and regularity of shipments, which is very important for their organization. On the other hand, lags in the introduction of centralized shipments hinders the development of barter operations. In order to avoid this it is necessary to realize a complex of measures of an organizational and technical nature--to create and equip truck enterprises with the necessary number of large-capacity specialized trucks to transport grain and mixed fodder, to secure the extensive use of economic and mathematical methods and network schedules during the planning and organization of shipments in order to significantly raise the effectiveness of utilizing transport, to accelerate shipments and to achieve considerable savings in transportation expenditures.

It is especially important to discuss questions of economizing on transportation expenditures. Their quantity is close to or in some cases greater than the quantity of production expenses in producing mixed fodder. Thus, for the national economy questions of the efficient delivery of mixed fodder are no less important than those on the production of mixed fodder from the point of view of the size of expenditures. It should be noted here that expenditures to ship grain and mixed fodder in barter are fully reimbursed by the state according to the existing instructions on barter operations.

This measure was called upon to stimulate the development of barter and simultaneously to secure equality in the economic conditions of management regardless of the location of the enterprise with regard to the procurement enterprise. In other words, this enables us to secure the partial redistribution of differential income. At the same time in such a system of compensation for transportation expenses the cost-accounting mechanism is weakened with regard to transportation expenditures on the part of the enterprise.

The transition to the centralized shipment of grains and mixed fodder with the accompanying decrease in transportation expenditures will be called upon to resist this tendency.

The problems that have been examined regarding improving interbranch ties between agriculture and procurement have great economic, social and political importance.

In summarizing the above, it is essential to emphasize that the continued development of interbranch ties between agriculture and procurement must follow the direction indicated in the decisions of the party and state. In other words, there must be a broad introduction of centralized grain and mixed-fodder shipments and great final national economic results must be achieved.

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